



Adapted for
Montgomery County Fire & Rescue
Driver Training Program



MARYLAND FIRE AND RESCUE INSTITUTE • UNIVERSITY OF MARYLAND

Emergency Vehicle Operator

Lesson 3-1: Driving Regulations and Common Collision Causes



Student Performance Objective

- After completing this lesson, the student shall be able to identify driving regulations and safety considerations for operating emergency vehicles.

A red fire truck is shown from a side profile, facing right. Its emergency lights are flashing, and the truck appears to be in motion. The background is a bright, hazy sky. The truck has a white stripe along its side and a white ladder mounted on the back.

Overview

- Driving Regulations
- Common Collision Causes

Driving Regulations

- Driver/Operators
 - Must maintain complete control, adjust speed for driving conditions, and operate in a manner consistent with professional image of fire service
 - Must be aware that they are subject to all traffic regulations when driving under nonemergency conditions

Driving Regulations

- Driver/operators are regulated in their duties by
 - Federal Laws
 - State or provincial motor vehicle codes
 - City ordinances
 - NFPA standards
 - Department policies

Driving Regulations

- Statutes give specific descriptions of the categories of vehicles they address; in most cases fire department vehicles, when responding to an emergency using warning devices, fall into the emergency category



WHY DOES EVOC EXIST?

§ 11-118 EMERGENCY VEHICLE – DEFINED

"Emergency vehicle" means any of the following vehicles that are designated by the Administration as entitled to the exemptions and privileges set forth in the Maryland Vehicle Law for emergency vehicles:

- (2) Vehicles of volunteer fire companies, rescue squads, fire departments, the Maryland Institute for Emergency Medical Services Systems, and the Maryland Fire and Rescue Institute;
- (3) State vehicles used in response to oil or hazardous materials spills;
- (5) Ambulances; and
- (6) Special vehicles funded or provided by federal, State, or local government and used for emergency or rescue purposes in this State.



WHY DOES EVOC EXIST?

TRAINING REQUIREMENTS

§ 16-102. Persons exempt from licensing requirements

(b) Regulations.

(1) The Administration shall adopt regulations that establish *mandatory training and testing requirements* that a political subdivision that operates a fire department, rescue squad, emergency medical services unit, or volunteer fire department must implement before the political subdivision may authorize an individual to operate an emergency vehicle in accordance with subsection (a)(12) of this section.

Driving Regulations

- Unless specifically exempt, driver/operators are subject to any statute, rule, regulation, or ordinance that governs any other vehicle operator
- Driver/operators must be familiar with all pertinent laws and procedures; ignorance of the law does not limit liability for failing to follow it
- Most driving regulations pertain to dry, clear roads during daylight conditions

Driving Regulations

- Driver/operators must adjust speed to compensate for road conditions that may make driving more hazardous
 - Rain, Snow, Fog
 - Darkness

SAFE SPEED IN TRANSIT



- Posted speed limits are for good conditions
- Slow for less than ideal conditions
- Smooth acceleration and deceleration
- Maintain adequate space cushions
- Your best defense is to **SLOW DOWN**



Posted speed limits are for ideal conditions

Driving Regulations

- In some jurisdictions, statutes may exempt emergency vehicles from driving regulations that apply to the general public. Exemptions could include
 - Speed limits
 - Direction of travel
 - Direction of turns
 - Parking statutes and ordinances
- Driver/operators must understand the content and scope of any exemptions

Driving Regulations

- The driver/operator is not protected from legal consequences of driving with reckless disregard for the safety of others



LEGAL TERMS

- **Negligence**

- a failure to exercise the care that a reasonably prudent person would exercise in like circumstances.
- COMAR - Negligent driving.- A person is guilty of negligent driving if he drives a motor vehicle in a careless or imprudent manner that endangers any property or the life or person of any individual.

- **Gross Negligence**

- a conscious, voluntary act or omission in reckless disregard of a legal duty and of the consequences to another party

- **Willful and Wanton**

- denotes conduct that is extreme and outrageous, in reckless disregard for the rights of others



MARYLAND CODE – TRANSPORTATION

§ 19-103 - LIABILITY FOR NEGLIGENT OPERATION

(b) Liability of operator. -- An operator of an emergency vehicle, who is authorized to operate the emergency vehicle by its owner while operating the emergency vehicle in the *performance of emergency service*.....shall have the immunity from liability described under § 5-639(b) of the Courts and Judicial Proceedings Article.

- Emergency Service: responding to an emergency call or fire alarm
- § 5-639 does not provide immunity from suit to an operator for a malicious act or omission or for gross negligence of the operator

MARYLAND CODE – TRANSPORTATION

DUTY OF CARE



None of the privileges or exceptions in the statutes relieve the driver of an emergency vehicle from the duty to drive with due regard for the safety of all persons.



DEPARTMENT POLICIES

- **Policy 808** – Safe Emergency Vehicle Operation
 - Fitness for duty
 - Vehicle preparedness
 - Driving procedures
- **Directive 04-21** – MCFRS Safe Driving Action Plan
 - Reducing response mode
 - Maximum speeds
 - EMS transport priorities
 - Collision reporting
 - Cell phone use

Driving Regulations

- Driver/operators must be familiar with the response district to be aware of areas prone to:
 - Traffic congestion
 - Flooding
 - Icing
 - Other road hazard issues

Common Collision Causes

- The driver/operator's most important responsibility is to operate apparatus safely
- If fire apparatus is involved in a collision while responding to an incident,
 - Responders may be delayed
 - Additional resources are deployed to handle the fire apparatus accident
 - Damaged apparatus will leave the jurisdiction with a reduced capacity

Common Collision Causes

- Firefighters and the AHJ may be involved in time-consuming litigation regarding injuries sustained during a collision
- Damaged apparatus may present an enormous financial burden
- A driver/operator lapse in judgement, as well as that of civilian drivers, can cause collisions

COVER THE BRAKE IN TRANSIT



- Cover the brake when you identify a probable hazard
- Approaching, entering, or traversing intersections
- Remove foot from accelerator and prepare to brake
- Advantages
 - Immediately decreases speed – auxiliary braking engages
 - Stopping distance decreases
 - Reduces reaction time
 - Requires a pause to accelerate



SAFE BEHAVIORS

- Officer operates the siren, radio, and auxiliary functions of the truck – driver focuses on driving
- Officer assists with routing
- Officer manages the MDT
- Officer assists with spotting for the driver
 - Intersections
 - Backing
 - Addresses and street signs
- Crew keeps chatter in the headsets to a minimum during responses



Common Collision Causes

- Intersections
 - Are most common place for collisions to occur
- Driver Operator Safety
 - Maintain situational awareness
 - Know local traffic laws
 - Complete training in a controlled environment

INTERSECTIONS ENTERING



- Entry occurs as soon as your front bumper crosses into cross-traffic
- If you cannot positively identify that right-of-way has been yielded to you, you must stop
 - Must do this for each individual lane
- Make eye contact with other drivers
 - Are other cars “acting” like they see you?
- Even when entering with the green light remain vigilant of other vehicles entering the intersection
- Avoid using the apparatus as a moving roadblock – this is aggressive driving

CASE STUDY #1

- Contributing Factors?
- MCFRS Guidelines
- Civil suit - 2014
 - Wrongful death
 - \$186,000



July 26, 2010
Two FF killed

INTERSECTIONS

OTHER UNITS



- Zone of confusion - Created by two or more emergency vehicles responding together
 - Civilian driver sees one emergency vehicle, but hears a different one at the same time
 - Civilian driver thinks the coast is clear but pulls into your path
 - Elderly and teenagers are especially susceptible
- High-risk situation
- Anticipate other vehicles to make mistakes during the confusion



INTERSECTIONS OTHER UNITS



INTERSECTIONS OTHER UNITS



It happened here.

Engine 23 struck Ambulance 21 as they both entered an intersection enroute to a Hazmat Box.



Common Collision Causes

- Backing accidents account for a significant percentage of all damage repair costs



Most
injuries are
minor

Fatalities
have
occurred

Common Collision Causes

- Many actions are considered reckless when driving an apparatus.
 - Speeding excessively
 - Running off pavement onto soft road shoulder
 - Reading a map or electronic device, talking on a cell phone, texting
 - Failing to abide by posted weight limits
 - Following too closely
 - Failing to obey posted traffic regulations
 - Failing to yield to other emergency vehicles
 - Reacting with panic or unpredictable behavior to an approaching emergency vehicle

Common Collision Causes

- Driver Operators
 - Should develop a safety-conscious attitude
 - Should consider the public image of their departments
 - Must remember that they have no control over the public's reaction to warning devices

ATTITUDE

- Arrive safely despite the incorrect or unexpected actions of others
- The right of way isn't yours until it is given to you
- Knowledge and skill are cancelled out by the wrong attitude

**The public has high expectations of the fire service.
It must be your desire to meet them.**





MOTIVATION

- Apparatus operators make more independent decisions than any other member of the crew
 - Pre-response
 - In transit
 - Arrival
 - Operating
- Apparatus is the most valuable asset placed under your control
- Apparatus has the potential to cause unlimited liability personally and professionally

PUBLIC IMAGE

THE WASHINGTON POST



August 2004

Emergency Vehicle Crashes Worry Montgomery Officials

Firetruck, Ambulance Accidents Raise Insurance Rates

By TIM CRAIG
Washington Post Staff Writer

Drivers of Montgomery County firetrucks and ambulances continue to be involved in what officials regard as an alarming number of accidents, causing insurance rates to skyrocket and forcing new policies designed to slow response times to some calls.

In a stern department-wide e-mail last month, prompted by four accidents within a 26-hour period over the Fourth of July weekend, Thomas W. Carr Jr., chief of the county's career firefighters, said

the drivers' performance was placing the public and fire and rescue personnel at risk.

"I am sitting in my office on July 4 thankful that I am not in the throes of planning a firefighter funeral or assisting a civilian family with their grief," he wrote. "We must break the chain and we have to do it immediately and that may take radical action. I am prepared to take action."

He added: "I am afraid we continue on the path to catastrophe."

No details about the recent accidents were available yesterday, but Carr's e-mail indicated that there

were no injuries.

In May 2003, The Washington Post reported that Montgomery firetrucks and ambulances had been involved in 1,100 accidents in the previous five years, doing so much damage to the fleet that the department risked losing its insurance coverage.

Departmental reviews of the most serious accidents, including crashes that left one motorist dead and more than a dozen injured, found that many could have been avoided had drivers slowed before

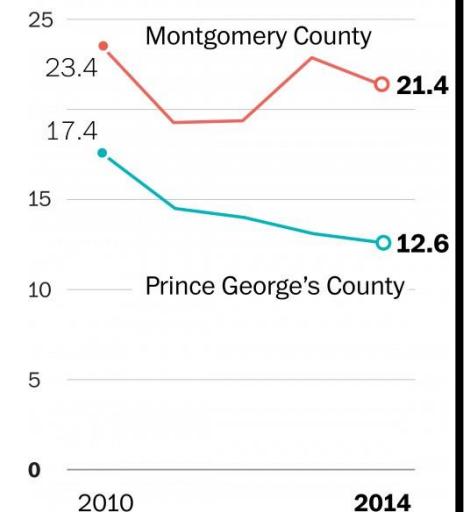
See FIRETRUCKS, B4, Col. 5

November 2015

**A leading
killer of
firefighters:
crashing the
truck on the
way to a call**

Accidents involving ambulances and fire trucks

Per 10,000 calls



Source: Montgomery County Fire and Rescue Service, Prince George's County Fire and Emergency Medical Services Department
THE WASHINGTON POST

PUBLIC IMAGE

FIREHOUSE MAGAZINE



This article was written by Matthew Mosk of the Washington Post, titled “Montgomery Fire, Rescue Crashes Rise.” Drivers of Montgomery County fire trucks and ambulances have had more than 1,100 accidents in the last five years.....Service is at risk of losing its insurance coverage. Montgomery has received warnings from its insurance underwriter. Departmental reviews of the most serious accidents, including crashes that left one motorist dead and more than a dozen injured, have found that many could have been avoided had drivers slowed before entering intersections or followed proper procedures as they responded to emergency calls. Montgomery Officials have known for at least three years that their department’s driving record was deficient and that the numbers have been getting worse-up from 154 crashes in 1997-98 to 217 in 2001-02. The county’s underwriter, Volunteer Firemen’s Insurance Services Inc., has charged progressively higher premiums each year since 2000. In 2002, premiums rose 18 percent to \$1.2 million. With accident costs still rising in December, the fire chief sent a bulletin....”due to the high number of claims.” “A major component of this problem is the number of preventable collisions we are currently experiencing,” the chief wrote.

November 2003
Excerpts from
Michael Wilbur’s
Emergency Vehicle
Operations column

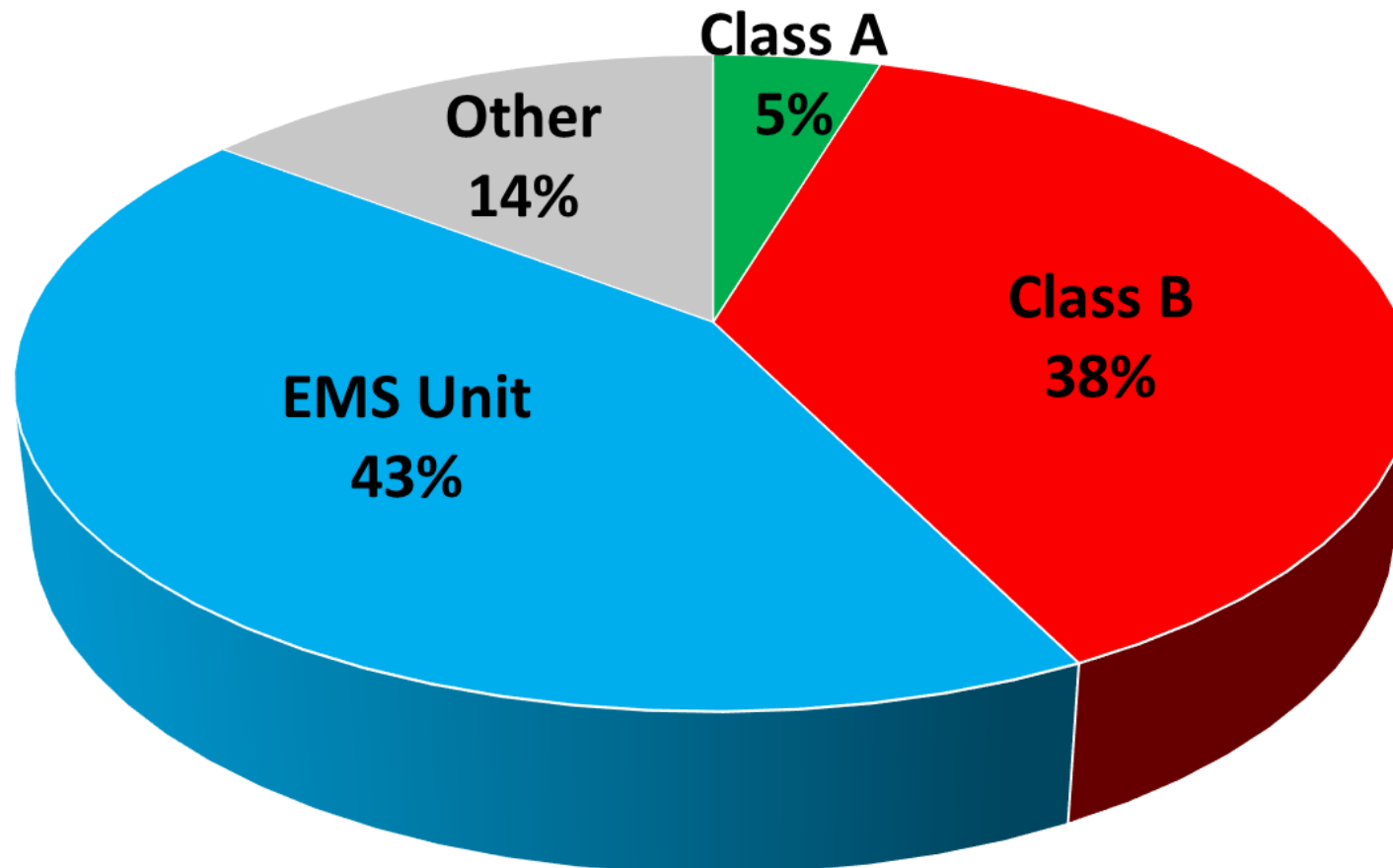
HISTORY MONTGOMERY COUNTY





STATISTICS

COLLISIONS BY VEHICLE TYPE – 2013-2015



SAFE DRIVING PRINCIPLES

PHILOSOPHY



We will drive safely despite the incorrect or reckless actions of other roadway users.

Assume the other driver....

-does not see you

-does not hear you

-will not yield to you

-will put their vehicle in your path

SAFE DRIVING PRINCIPLES

RESPONSIBILITY

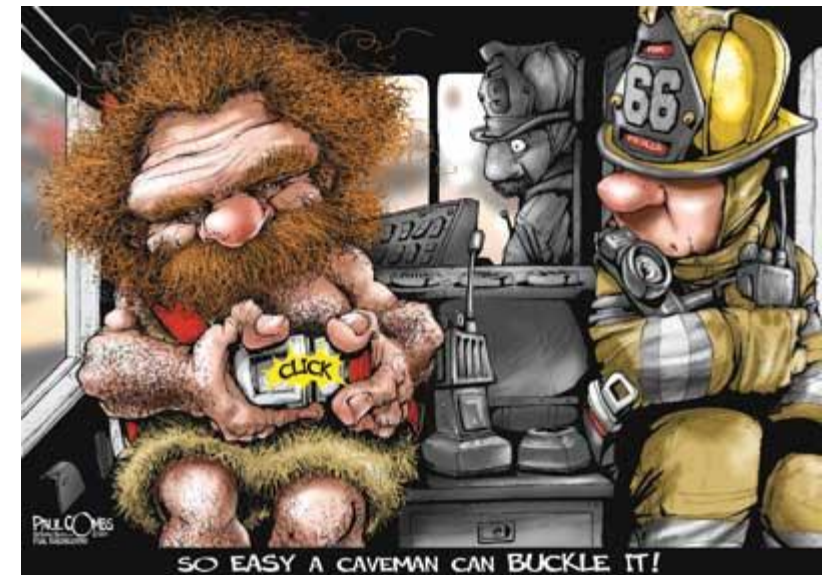


Drivers are responsible for:

- Ensuring the apparatus is ready for service
- Ensuring the apparatus is maintained and mechanically sound
- Developing and maintaining their own skills and knowledge
- Anticipating lack of skill and knowledge of pedestrians and other drivers
- Maintaining situational awareness to predict hazards and take action to mitigate them
- Knowing and complying with applicable laws and policies

SAFE BEHAVIORS

- Wear your seatbelt – encourage your crew to wear theirs
 - Seatbelt alarms are an avoidable distraction
- Complete your 360° check
- Drop a wheel chock
- Use the headsets to hear and be heard
- Remove the headset when backing or being directed by people on the ground
- When in doubt – stop, get out, and look for yourself





Common Collision Causes

Excessive speed

Loss of control and inability to stop

Difficulty braking and stopping

Possibility of brake fade

Common Collision Causes

- Departments must ensure that driver/operators complete a thorough training program.



Driver/operators
must be trained on
assigned vehicles

Unfamiliarity with
controls and handling
may lead to collision

Common Collision Causes

- Accidents can occur because of overloading, nonengineered modifications, and misuse.



Common Collision Causes

- Mechanical failure may be immediate and without warning, possibly resulting in an accident.

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graph LR; A((Pretrip inspection and effective maintenance program)) --> B((Reduced likelihood of mechanical failure))
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Pretrip
inspection
and effective
maintenance
program

Reduced
likelihood of
mechanical
failure

Common Collision Causes

- Poor vehicle design can be the cause of serious fire apparatus accidents.



Built by
apparatus
manufacturers



Built by
department
members or
local mechanics



Common Collision Causes

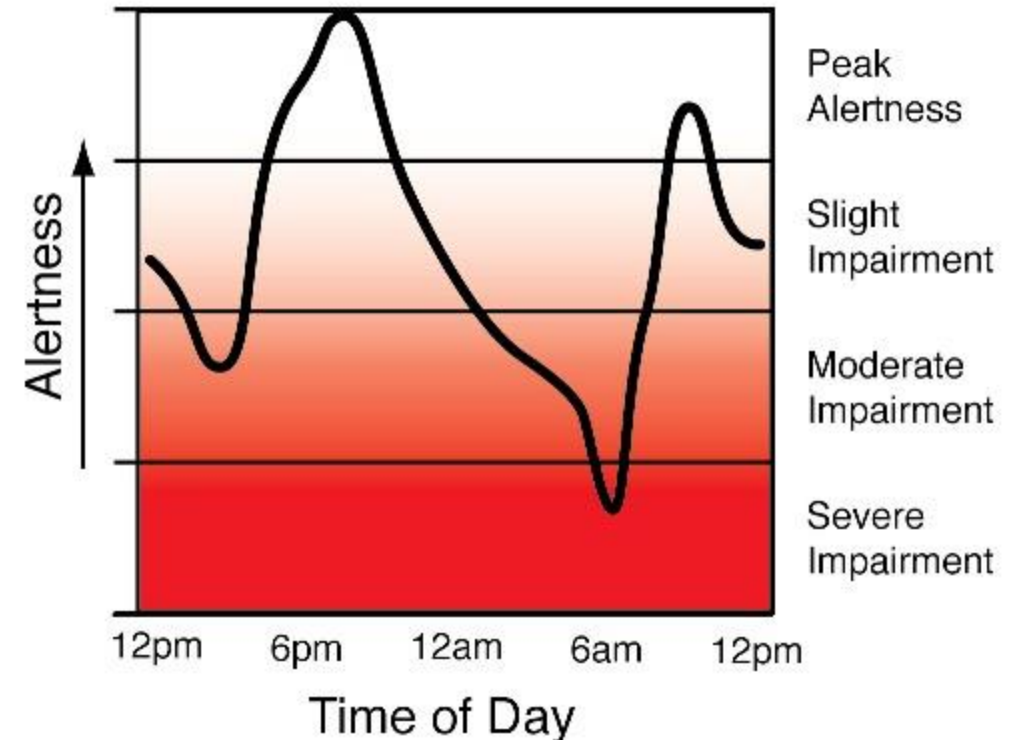
- Driver/operators must report to duty without compromised physical or mental ability.

Impairment may result from

- Substance abuse
- Use of prescription or over-the-counter drugs
- Stress from personal issues such as divorce, bankruptcy, impending hardship, death in the family
- Illness
- Depression
- Fatigue

DRIVER FATIGUE

- Not just falling asleep at the wheel
 - Falling asleep is an extreme form of driver fatigue
- Fatigue is tiredness, weariness or exhaustion
- Behavioral signs
 - changes in mood and motivation
 - failure to complete routines and
 - slower responses to questions or requests



DRIVER FATIGUE CAUSES



- Stress
- Lack of quality sleep or interrupted sleep patterns
 - apnea
- Substance abuse
- Prescription medications
- Irregular work hours
- Irregular meal times/eating habits



DRIVER FATIGUE EFFECTS



- increasing reaction time
- degrading attention and vigilance
- increasing distractibility and confusion
- decreasing motivation, and
- increasing the probability of driving performance errors



DRIVER FATIGUE PREVENTION

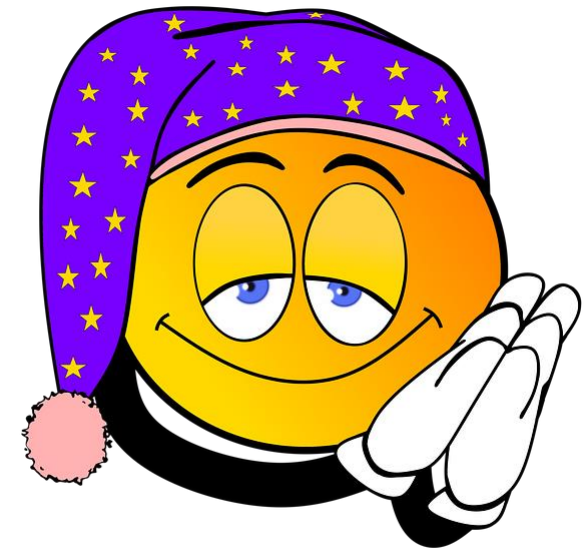


- Sleep schedule
 - Have a routine
- Sleep environment
 - Remove distractions
 - Dark, cool, clean
- Pre-bed snacks/drinks
 - No heavy foods or alcohol
 - No caffeine
- Exercise
 - Allow 3 hours for cool-down
- Diet
 - Avoid fatty or sugary food
- Naps
 - Not a substitute for night sleep
 - 20-30 minutes is good
 - >45 minutes is not good
- Shift schedule
 - Should you be working OT?

DRIVER FATIGUE ON THE ROAD



- Get fresh air into your vehicle
- Keep your eyes moving
- Vary the siren pitch
- Maintain a conversation
- STOP



No remedies fully offset the need for restful sleep!



OTHER IMPAIRMENTS

- Substance abuse
- Prescription medications
- Over-the-counter medications
- Physical issues
 - Vision
 - Hearing
 - Orthopedics

YOU judge your readiness to drive.

Remember – it is not just YOU who is effected by your driving – it is your crew and the other vehicles around you. Don't be selfish.

EMOTIONS

- Aggressive drivers/Road rage
- Response to siren – “sirencide”
- Call type
- State of mind/Outside influences
- Shift dynamic/communication skills



**CHECK
YOURSELF
BEFORE YOU
WRECK
YOURSELF!**

EMOTIONS

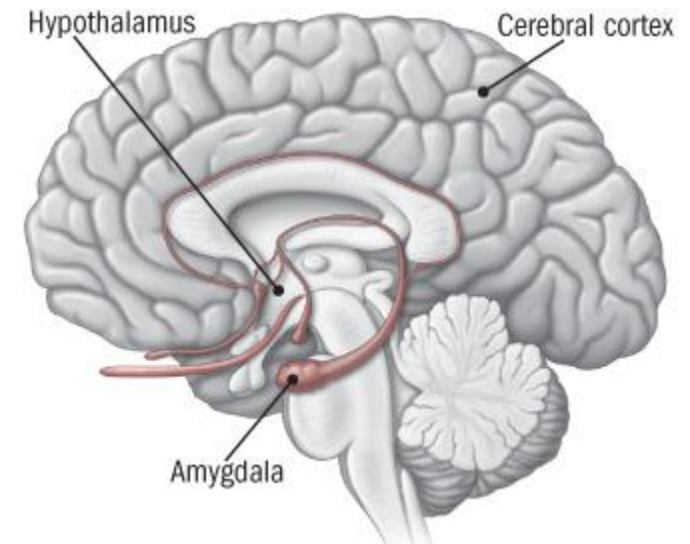
When emotions overwhelm the operator:

- Tunnel vision/mission fixation may develop
- Vehicle speed increases
- Ability to prioritize actions appropriately is lost
- Communications break down

A little stress is good – a lot is not



Smith System “E.D.G.E.” DVD



Student Performance Objective

- After completing this lesson, the student shall be able to identify driving regulations and safety considerations for operating emergency vehicles.

Review

- Driving Regulations
- Common Collision Causes